

Colorado Helps

Advanced Manufacturing Program

Lamar Community College Process Brief:

Hybrid Welding

**Renée Edwards
Heather McKay**

Released October 2015



RUTGERS

Education and Employment
Research Center

School of Management and Labor Relations
Janice H. Levin Building
94 Rockefeller Road
Piscataway, New Jersey 08854

smlr.rutgers.edu/eerc

Colorado Helps Advanced Manufacturing Program
Lamar Community College
Process Brief: Hybrid Welding

Renée Edwards
Heather McKay

Education and Employment Research Center
School of Management and Labor Relations
Rutgers, the State University of New Jersey
Janice H. Levin Building
94 Rockafeller Road
Piscataway, NJ 08854

October 2015

This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including information on linked sites and including, but not limited to, accuracy of the information or its completeness, timelines, usefulness, adequacy, continued availability, or ownership.

ABOUT RUTGERS SCHOOL OF MANAGEMENT AND LABOR RELATIONS

Rutgers' School of Management and Labor Relations (SMLR) is the leading source of expertise on the world of work, building effective and sustainable organizations, and the changing employment relationship. The school is comprised of two departments—one focused on all aspects of strategic human resource management and the other dedicated to the social science specialties related to labor studies and employment relations. In addition, SMLR provides many continuing education and certificate programs taught by world-class researchers and expert practitioners.

SMLR was originally established by an act of the New Jersey legislature in 1947 as the Institute of Management and Labor Relations (IMLR). Like its counterparts that were created in the other large industrial states at the same time, the Institute was chartered to promote new forms of labor-management cooperation following the industrial unrest at the end of World War II. It officially became a school at the flagship campus of the State University of New Jersey in New Brunswick/Piscataway in 1994. For more information, visit smlr.rutgers.edu.

ABOUT THE EDUCATION AND EMPLOYMENT RESEARCH CENTER

Rutgers' Education and Employment Research Center (EERC) is housed within the School of Management and Labor Relations. EERC conducts research and evaluation on programs and policies at the intersection of education and employment. Our work strives to improve policy and practice so that institutions may provide educational programs and pathways that ensure individuals obtain the education needed for success in the workplace, and employers have a skilled workforce to meet their human resource needs. For more information on our mission and current research, visit smlr.rutgers.edu/eerc.

INTRODUCTION

The Colorado Helps Advanced Manufacturing (CHAMP) is a United States Department of Labor (USDOL) Trade Adjustment Assistance Community College and Career Training- (TAACCCT) funded grant project intended to develop new or redesigned online and hybrid courses leading to credentials in advanced manufacturing in high demand across the state of Colorado. CHAMP is an interstate consortium consisting of seven community colleges, a technical college, and a four-year university within Colorado. The consortium includes Front Range Community College (FRCC), Aims Community College (AIMS), the Community College of Denver (CCD), Emily Griffith Technical College (EGTC), Lamar Community College (LCC), Pikes Peak Community College (PPCC), Pueblo Community College (PCC) and Red Rocks Community College/Warren Technical College (RRCC). MSU Denver is CHAMP's four-year partner and will be accepting credit acquired from partnering community colleges for transfer and articulation to MSU Denver's degree programs. The Colorado Community College System (CCCS) provides technical assistance and management support for the consortium.

One of CHAMP's primary goals was to create innovative flexible learning opportunities for students. The grant called for schools' existing courses to be adapted for hybrid delivery, where a portion of the traditional face-to-face instruction is replaced by web-based online learning. The intention was improve access and to make better use of learning time. In a hybrid course, class time can be used for deeper conceptual learning and lab activities, creating a richer, immersive learning environment. Using open education resources (OER) into the redesigned courses was also a goal, which can decrease or eliminate the reliance on textbooks and allows course content to be openly shared.

This brief highlights the transition and implementation process of LCC's welding program from a fully 'traditional' classroom-based curriculum to one that is hybrid. The purpose of this brief is to provide a summary of LCC's activities, successes, and challenges to date relative to the program redesign process and strategies that can be spread and scaled. This case study begins with an overview of methodology and data sources and then moves on to a brief contextual frame—background information about LCC, its location and its size. These sections are followed by: a) a summary of LCC's goals relative to program redesign, b) a discussion of the program's implementation process, c) the identification of participating CHAMP staff and their respective roles in the program redesign, and d) a summary of achievements and challenges to date along with next steps.

METHODOLOGY/DATA SOURCES

This report examines the development and implementation of LCC's welding program, including experiences of the project team members and participating staff, faculty, and students using qualitative data. Subsequent EERC evaluation reports will include outcome measures and will report on quantitative data collection and analysis.

Qualitative methodology for this report includes content analysis of consortium goals and activities to date, relevant proposals, and project- and college-specific statements of work, and relevant scholarly literature. EERC team members have also conducted phone interviews with the college project leads, faculty, and the CCCS instructional designer involved in the program redesign. Interviews were taped, transcribed, and subsequently analyzed by EERC team members to represent LCC's program redesign story.

COLLEGE DESCRIPTION

LCC is located in rural southeast Colorado. The school offers multiple occupational and degree programs focused on agriculture and farming, allied health, and historic preservation; as well as other transferable and industry-specific programs such as criminal justice. The college also has an exemplary athletic program which attracts athletes from outside the area. In 2014, 839 students attended LCC, making it the smallest school in the CCCS system. LCC's retention rates and graduation rates have consistently been above the state average. Relative to the welding program at the college, LCC employs one full-time instructor and a part-time adjunct participates in instruction.

LCC'S CHAMP GOALS

One of LCC's primary goals for CHAMP was to redesign and expand their welding program. Welding at LCC is comprised of three certificates, basic, intermediate, and advanced. These can be taken independently or be stacked into an associate of applied science degree (AAS) of welding. Students can also stack welding certificates into a Construction Technologies AAS. Prior to CHAMP, the welding program (program) was taught in-person, with hands-on welding laboratory components. The school's goal through CHAMP was to redesign the program to "flipped classroom" design and replace classroom-based lecture and textbook components with online instruction and materials through the Desire to Learn (D2L), a web-based teaching platform. This would allow students to complete their reading and conceptual learning requirements at home or in the school's computer lab, leaving face to face lab time for more in-depth learning and exploration of concepts. The program's lab component would become project based, giving students the ability to apply what they have learned and allow for student competency to be measured with authentic assessments.

PROGRAM DEVELOPMENT AND IMPLEMENTATION

In order to help with program design/redesign, CCCS provided an instructional design team to assist CHAMP consortium colleges with the conversion of curriculum to online and hybrid formats. The goal was to provide "a program lead instructional design coordinator and a program instructional designer" to help "instructional staff make new and existing courses available for online and hybrid delivery," thus improving "the consortium institutions' ability to deliver online education." Since LCC is an extremely small institution, the college does not

employ instructional support staff. Instead, LCC's primary welding instructor relied heavily on help from the CCCS instructional design team to help with the redesign.

Generally speaking, transition from 'traditional' classroom-based teaching to an online or hybrid format can be difficult for some institutions/faculty members. Introducing web-based learning and other teaching innovations "is disruptive to the existing system" and "compels change at multiple levels" (Samarawickrema & Stacy, 2007, p. 314). Some academic staff view innovations "with uncertainty and skepticism, as pioneering work can be riddled with obstacles" (Samarawichrema & Stacy, 2007, p. 314). LCC, however, embraced the opportunity through teamwork at the system, institution, and faculty levels to transition the courses, engage the students, and institutionalize the change.

System role. As previously mentioned, the system provided an instructional design team to help the consortium colleges as they worked through the process of developing and redesigning courses for online platforms. The welding program was part of a consortium-wide effort, with multiple instructors and instructional designers involved in the program redesign. Given LCC's small size and subsequent lack of its own instructional designer, the colleges' sole full-time welding instructor was tasked with curriculum redesign of LCC's courses. Because of this, the instructor relied heavily on the system's team to help him learn the basics of developing online course curriculum and incorporating OER resources. The system's instructional designer described the process of providing guidance, trouble-shooting, and giving LCC the necessary tools needed to succeed. He said their job is "about guidance and a resource to use for help."

The system's instructional design team worked with LCC's instructor to help him decide how he would change his courses to convert them to the hybrid format, help him with development of the courses, and also help him meet the OER requirements of the grant—to convert at least 80 percent of the course content to open source. Work on converting the welding courses began in January 2014 with the instructional design coordinator meeting with the LCC team to discuss hybrid course design and begin outlining a plan to document what was currently happening in the courses. In June 2014, the instructional design coordinator and the instructional designer traveled to LCC to meet the instructor, gauge his technology skills and begin to competency-map what he was teaching in his courses. The instructional design team stressed the importance of understanding both an instructor's style of teaching and project-based learning in order to transition the course(s) more smoothly into something the instructor can teach from the new platform. The instructional designer stated it is important to understand how the instructor teaches his face-to-face courses in order to determine "how best to convert them to a hybrid or blended learning delivery style."

Since the instructor lacked the background and familiarity with using D2L and teaching online, he had a "steep learning curve." This is not unusual—studies have found that when institutions add learning management systems (LMS) such as D2L, the learning curve for instructors can be high. Christie and Jurado (2009) found that "the potential to present course material in innovative and pedagogical ways is enormous with an LMS but so is the learning

curve required to realize such potential” (p. 278). For LCC’s instructor, this learning curve was not only relative to the tools and technology involved in delivering the courses in a hybrid format, but also in the andragogy involved, and how instruction would change when material was put online. He also had to make decisions about what would be taught online and what would remain in the classroom. Although the instructional designer did not directly help make these decisions, he did help the faculty member think through what elements of his course would be fit better in an online format and which were better left in the classroom. He also assisted the instructor in choosing tools that would help the teaching—and learning—processes, such as online quizzes.

The instructional designer also spoke about this learning curve with industry experts who do not have a formal teaching background. He stated “They’re experts in their field, but they don’t have a lot of teaching theory behind it.” It is important to support them fully “so they don’t get exhausted and throw up their hands and want to quit because it’s just not working as well as they were hoping.” Overall, the system’s instructional design team was impressed with the instructor’s willingness to “just dive into the deep end in an area that he didn’t know a lot about,” stating he was “very willing and open to get any sort of help we could offer.” He “is really out to do what’s best for the student and to be able to continue to improve as an instructor and continue to improve his program.” It is likely the instructor’s willing attitude increased LCC’s successful transition to the new format. Research has found that “faculty, who are both the recipients and agents of change, must be open to online education to increase the likelihood of its successful implementation” (Mitchell, Parlamis, & Claiborne, 2015). Although LCC’s instructor was skeptical about the utility of online welding education at first, he was open to the idea and willing to try it.

Another element in redesigning courses for the program was the incorporation of OER. The system instructional designers find that often instructors rely heavily on textbooks and proprietary material. To create OER content, however, the instructor has to create content-specific material in line with the learning objectives being taught and then add it to the online platform. This can be challenging at first; many instructors feel that they have to essentially rewrite their textbook. Once instructors realize OER content is a tool, similar to a textbook or computer program, creating material which is contextualized to their classroom and student population while meeting course competencies becomes much easier for them. One of the system instructional designers explained the process as:

Trying to figure out where teaching is happening and what knowledge [the instructor is] bringing into the classroom and how can we capture that and put that online and make that better for the students. So that way [students are learning the content] before they actually get into class, and then [the instructor is] just really standing side-by-side with that student to help them with their individual needs in the face-to-face environment.

Also, it is imperative for instructors to understand that when they build an hybrid online course they can still use some proprietary materials and textbook content; in the CHAMP grant, the

SOW requires 80 percent of the course material be OER—the other 20 percent can be proprietary. But elements of the course that are better suited to the online platform can be converted to OER and put online. For LCC’s welding instructor, there was a great benefit to putting reading with quiz assessments online—this decreased the time he spent with students in the classroom every day and increased the amount of time they could spend in the welding lab.

Project lead and institutional role. The system’s instructional design team was instrumental in helping LCC transition courses to the hybrid format, but they were not alone. LCC’s two co-project leads were also heavily involved in making the transition as smooth as possible. One project lead was responsible for the administrative aspects as well as learning more about how to support instructors with online tools and the D2L platform. This way she was eventually able to take over some of the responsibilities from the system’s instructional design team. This also cut down on time; if the instructor needed assistance with something that she could help out with, it eliminated time spent waiting for the system’s team to help.

The other CHAMP project lead at the college came from a background in training faculty in higher education and currently teaches education courses. Because of this, he was able to help the welding instructor with some of the pedagogical-related issues relative to converting materials and teaching online. As the instructor said:

I was kind of confused and lost as far as the computer’s concerned for the D2L and Banner and all of the programs that we use here. And [the project lead] took me aside and set me at ease, and he says, “Listen. All you need to do is teach these guys how to weld because we will teach you how to teach.”

Together, the two leads have created a strong supportive system for the instructor. Both project leads, though, agree that part of LCC’s success in CHAMP to date is attributed to how the institution operates. Given its small size, staff at the school have multiple roles, and continuously have to adapt and change. Collaboration and learning new things is part of their daily lives:

We have to work [in] a lot of different areas and collaborate with a lot of different people within different structures in our college, which then makes us able to change and know that that’s ahead of us and that’s part of just the workplace.

Additionally, they both feel the environment at the college invites change in the form of new opportunities. For example, administration at the school encourages faculty and staff to remain keenly aware of the needs and wants of industry. They encourage instructors and staff to constantly be considering what industry is doing and how the school can be innovative and serve industry’s needs. The college encourages change to keep up with industry needs. As one project lead stated, “We know that if we sit here and offer something as we did ten years ago – that’s not going to meet industry needs.” Changing to meet industry needs allows the college to grow and expand: “The best opportunity for growth for Lamar is to take programs like welding

that are good for us and try and figure out a way to expand the reach a little bit.” The CHAMP grant was an excellent opportunity for LCC to expand and grow the welding program by increasing its reach through the hybridized format.

Faculty role. As mentioned above, the primary faculty member for the welding program courses at LCC has a background in welding rather than teaching; he is relatively new to teaching and was completely unfamiliar with distance-learning platforms, including D2L. Prior to CHAMP, his teaching strategy was classroom and textbook-based. Because he lacked previous experience with the web-based platform and the process of converting teaching material to an online format, he relied heavily on the help and support of the system’s instructional design team and CHAMP project staff at the college. Literature has found that “supportive environments and extensive interpersonal networks that reached outside participants’ local department and faculties provided exposure to information and contributed to adoption” (Samarawichrema and Stacey, 2007, p. 320). This precisely describes what occurred at LCC: the faculty member was able to secure help, training, and assistance, both from within his institution and external to it, and the supportive environment he encountered—along with his own willingness to learn new information—contributed to his adoption of the innovation.

After learning his welding courses were to be converted to a hybrid format, the faculty member was at first skeptical that teaching portions of welding online would be just as good as traditional teaching methods. However, he was open to adopting the new teaching strategy. One of LCC’s CHAMP project leads stated that the faculty member’s willingness to make changes is one of the primary reasons the implementation of the hybrid program has gone so well: “Despite that skepticism and doubt, he’s been malleable and just completely on board with being willing to make changes.”

His main role in redesigning the program was to develop course mapping for five welding courses that would be part of the hybrid program. The faculty member reported his first step was learning the web-based platform his courses would be housed within. He had previously attended training sessions to learn how to use D2L, but was not using it regularly in his courses. He found that just sitting down and working through the day-to-day lesson plans for his courses and trying to navigate the platform helped him immensely.

Having transitioned from industry to teaching, the faculty member has found the teaching environment to be quite different, and always evolving. He states this is one of the reasons he is open to trying new things:

I find that in the instructional atmosphere things change extremely quickly. And it’s constantly changing. I don’t think I’ve ever been here one year, and the next year everything has been the same. Something has always changed, and it’s always evolving into something different. I’m just a teacher. I go with the flow. I give my best, and I go with the flow.

He also reports his willingness to change is aided because he's had a lot of help; studies have found that faculty members are more willing to adopt new technology and new teaching strategies when they perceive they have help and support. An unwillingness to adopt new strategies "arises when faculty perceive little support from their department or colleagues, and a lack of assistance in the form of inadequate resources, technical help, and training" (Gilcher & Johnston, 1989; Dooley & Murphy, 2000; as cited in Mitchell & Iris-Geva May, 2009).

Student Reception. Although the hybridized format will run for the first time "officially" this fall (2015), the welding program went through a 'test-run' spring of 2015. This allowed the faculty to get used to teaching from the D2L platform, and to have time to make any changes. It also allowed CHAMP staff to get a "peek" at how students would respond to the new curriculum format. LCC's primary instructor felt that at first some of his students were hesitant when they heard some of their course content was going to be accessed through an online format. He said:

These are the type of guys that want to be in a shop working with their hands. And when I initially introduced the fact that some of it was going to be in online content, they kind of balked at the idea initially, because they're here to weld. That's the bottom line.

The instructor said he expressed to students the benefits of learning technology at the same time as learning to weld, and stressed that current industry needs include learning how to operate technology:

Computers are integrated into everything, including the welding machines they [students] are running out here in shop [the welding lab]. And any job that they try to get in the future, the chances are they're going to have to use computers for an online application. They really need to form the computer aspect and welding together.

Once he introduced students to this benefit, he felt the transition was easier for them. In addition, the goal of the program is also to reduce student time in the classroom, allowing them more time for in-depth learning with the instructor and the welding equipment. The hybrid program will also ultimately decrease the time to certificate. These are factors that students can see the benefits of. The instructor noted that as the semester progressed he could tell students were beginning to see the benefits of the new platform.

He has seen a difference in students in two other areas, as well: grades, and content knowledge. By putting quizzes online, he believes this has made learning easier for the students; there is less textbook reading (replaced by online content), and the information is readily available for them through increased access (hyper-links, online tools, and integrated online content). He has found student quiz scores have improved, and students are producing more "100 percents" on their graded papers than before the redesign.

Not only are students doing better with their in-class assignments, but the instructor feels they are actually learning and retaining the information better. The best way to judge whether a student is learning welding properly – and retaining the information – is through their use of welding terminology, which is important once they are working in the field. He finds students are using the proper terminology and vocabulary during hands-on welding labs more often than previously, which tells him they are “getting the information” from the online content and remembering it.

The transition to hybrid has also benefitted the instructor; he spends less time reviewing content with students in the classroom, and less time with “paper and pencil” grading. There is more computer work than he did previously, but he feels the computer-related work has increased his ability to provide instant feedback for students and offer them help at critical junctures if they begin to slip behind. He is able to keep track of their progress online and “watch it on a day-to-day basis.” This has allowed him to identify and help students that are falling behind.

During the initial phases of the redesign, there was some concern that students would lack the connectivity needed to access the internet off campus and complete their required assignments outside classroom time. Because of this, a computer lab on campus was made available for the welding students to use. The first two weeks of the program, the instructor walked students to the computer lab and helped them access the content. This helped students understand the process as well as what was expected of them. Aside from giving them access to the internet, CHAMP staff felt this would help students by “giving them the time to create these new habits of how they’re going to do this work.” Students who had internet access at home were later allowed to leave early and do their reading from home. Both of the project leads and the instructor felt that most students were opting to complete their online content off campus, which at first seemed surprising. One CHAMP staff member commented that “typically I think we believe that there is a lack of connectivity in the rural areas and that they are not able to do the adaptive technology as quickly as we are seeing in the urban environments. And I’m not sure that is the case.” Another staff member said many students were using their smartphones or tablets to connect to their coursework. By the end of the semester, most students were accessing their coursework off campus, indicating connectivity was not an issue.

At first, getting students to access the online content was difficult for another reason. During the first few weeks of classes, when students were accessing their coursework from campus during class time, it was difficult for the instructor to keep the students focused on their coursework. Students wanted to weld, not read. One of the project leads said some students “would rather just go right in the lab and be welding and [were] not interested in the theory or the steps behind something.” Students would spend time in the welding lab, not the computer lab. Even these students, though, eventually “became a little bit more receptive” of the online content. Partly, she said, this was because some of their classmates were very successful as a result of the online content and valued it. As these students talked about what they learned online, and began to use the terminology and vocabulary in the welding lab, they began to influence the other students to complete the online coursework.

The project leads see this as a culture change, believing resistance will eventually evolve out. Right now the process is still new, but soon it will simply be the new normal. They feel that for everyone involved—students, faculty and staff—“a semester or two, a year down the road, nobody's ever going to know it was anything different. So, the issues we're dealing with now are going to decrease, we all believe.”

CHALLENGES

Although LCC has been ultimately successful in transitioning the welding program to hybrid, the process has not been without challenges. Studies have found that the biggest barriers/challenges to adopting new online/hybrid learning strategies at colleges come in the form of challenges to faculty—such as technology skills, adapting pedagogic strategies for the online environment, conceptualizing course changes for the online platform, and finding the increased time required to transition courses (Hixon et al, 2012). Not surprisingly, LCC's instructor feels his biggest challenge was learning—the delivery platform, the technology, the new material, and the overall process. At times it has been difficult; he noted that “it's kind of hard to teach something when you're learning it at the same time.” Transitioning material to online content was “rather intimidating initially.” But his attitude was to “stick with it” and “figure it out.” He believes the process overall has been beneficial and the resulting curriculum is much stronger as a result.

The transition was also difficult for some students because it was a completely new way of doing things. They were previously used to showing up at class and doing everything there; reading was done out of textbooks during class time with instructor guidance. With the new online platform, students are now required to do their reading and online content outside of the classroom. The new way of doing things, in addition to learning the technology, was difficult for some students. All of a sudden, they were required to do “homework” which was also “online, with technology.” The change was a big one for some students and required some adjusting. There was a general feel among CHAMP staff at the college that some students took to the new format right away and others needed more time to adjust.

Another challenge that emerged over time was an apparent disconnect between online content and material being reviewed during the hands-on welding lab. Reading assignments were not aligned properly with lab-based exercises, which created confusion. This was compounded by the propensity of some students to procrastinate. When students dropped behind in their reading and online content they were unable to perform the lab activities expected of them because they had not learned the material they were expected to perform. The instructor has since revised the courses to include timelines and to ensure students are reading the content needed prior to the hand-on activities.

ACHIEVEMENTS

The redesigned welding program has been an achievement for LCC in a number of ways. First, collaboration with other consortium welding instructors has allowed for connection among LCC and other consortium colleges and expansion in the skills sets being taught to students. Design of the program overall was split between the welding instructors in the consortium. LCC's instructor was responsible for five courses. The rest of the courses used in the consortium welding program were designed by other consortium instructors. LCC's instructor reported this was challenging to some degree because those courses were different than the ones he built, and took him longer to get used to teaching. But this collaboration has also yielded some positive results.

One of the CHAMP instructional design team members said faculty across the consortium are able to now see how other instructors teach, which is beneficial to the student because students may need to find a job outside the immediate area. Instructors in regional areas tend to teach the skills that are important to their immediate area's industry needs, which may be different than the industry needs in other areas. This inter-connectedness has allowed instructors to recognize the need to teach a wider skill set:

This process has really helped connect...programs with other programs in the state. All the programs are getting more connected. There's a tendency for [instructors] to teach the jobs that happen to be in their immediate area, and they're tailoring a lot of their instruction to that, which makes perfect sense. But...teaching was so different [among the colleges]. And what is great about this [CHAMP] is we are able to connect all these colleges together.

Connection among consortium colleges allows for students to learn skills sets that will serve them in multiple areas, rather than just the area in which they learn the skill:

Students are moving around. A student in Lamar needs to be able to get a job in Denver because that might be where that student ends up. And if we only teach them the skill set that's needed in Lamar, we're doing them a disservice because they might not find the job they want in Lamar. They may need to move. And vice versa – you may find a student in Denver, their job is out somewhere in rural Colorado and they don't have the skill set that's needed there. They're just not going to be able to be successful.

Now that instructors are sharing courses among the colleges, and creating shareable OER content, they have access to materials and course content that other faculty across the state are using. This is something that will continue to shape curriculum into the future:

It will have a longstanding impact on discussions within these disciplines about how they're teaching and what they're doing and what they can do to support each other to

make sure that they're consistent and that their students are getting – and meeting – the competencies that they've agreed upon at those state faculty committee.

At LCC, this collaboration has directly impacted the welding program. One of the CHAMP project leads stated it had “started a great conversation with the [consortium-wide] welding group” but has especially helped LCC’s small (and rural) welding program because there is now “three or four high quality welding instructors sharing ideas and bouncing ideas off of each other, which is something we just don't get in a place like Lamar.” Since LCC’s welding program previously had only one primary instructor (and one part-time volunteer adjunct), this has significantly multiplied the instructor input into the welding program. Broadly speaking, more colleges are beginning to utilize “a collaborative approach to training and support models which aid faculty in overcoming some of the challenges” in developing high-quality online and hybrid courses (Hixon, et al, 2012, p.103). This systematic, collaborative approach is instrumental in helping instructors and institutions succeed in presenting new ways for students to learn.

LCC is also in the process of shifting paradigms regarding online instruction at the institution; something CHAMP has given the college further opportunity to do. Part of this has come in the form of presenting students with coursework as ‘preparation for employment,’ rather than course requirements. For example, instead of framing the online components as “homework,” instructors are framing the content as job preparation. As students may need to read blueprints outside of work hours, they also need to read their course material outside of class time. Showing up on time to class is framed in terms of showing up on time to work. Staying current on reading material is framed as preparation for specific skills necessary the following day. Instead of taking attendance and keeping track of students who are off-task via a traditional grade-point scale, students are given an “employability rating.” This directly relates to employable skills, which allows students to consider their education as training for the job they want. It also helps the instructors frame the hybrid content as a better way for students to prepare for employment.

Transitioning the curriculum to hybrid has also allowed LCC to build a very strong welding curriculum. Not only is this something the instructor benefits from currently, but the school will benefit as well; when the instructor leaves, the next instructor will have a strong course to build from, instead of starting with nothing. The development of the courses, including connecting and aligning concepts in each subject area, is now transparent and concise. The project leads believe the process has also served as training for them relative to how to transition courses to online and hybrid formats, which will carry over to other departments and programs at the school.

Allowing the instructor time to time to “try out” the hybrid format before being thrust into teaching it helped the instructor gain confidence with the new platform. One of the system’s instructional designers stated LCC’s project leads did the instructor a great service by building in extra time for him to get used to the new format: “Not only was he getting the help he

needed to develop the courses, but then he got the support that he needed to actually try out this new delivery style, which was new to him.” Samarawickrema & Stacy (2007), have found that one of the key ways potential adopters of new technology are influenced to adopt is by allowing them time to “try it out to decrease their uncertainty” about the new way of teaching (p. 314).

Research has found that the development of online courses can follow one of two general approaches: 1) a traditional, independent faculty-driven approach, or 2) a more collaborative approach (Hixon, Buckenmeyer, Barczyk, Feldman, & Zamojski, 2012). LCC’s project leads, the welding instructor, and the system instructional design team all describes the college’s successful transition to the redesigned hybrid format as being a result of teamwork and collaboration. Each contributing actor brought to the table a unique expertise that, together, ultimately created success. One of the project leads described the process as “really a team effort.” The other said “if there’s one thing I’ve learned in education, it’s that you can’t be an expert at everything, and you need to accept where you have no expertise and find that.” For example, he said, LCC CHAMP staff realized early on that while the team at LCC had the experience in instruction, professionalization, industry need, welding content, program management, and administration between all of them, they lacked the necessary skills in instructional design and technology. The system’s instructional design team filled this gap. The leads both agreed that “without them, we wouldn’t have been able to do it.” In fact, LCC CHAMP staff all agreed that the course redesign could not have happened without the effort each of the team members brought to the table. One project lead summed this up when he said “It doesn’t just happen with one person. It happened with three or four of us that all had some expertise in some area to come together and work...we all had different strengths we brought to the table.” A study by Lackey (2011) revealed that “faculty found collaborating with colleagues, more one-on-one assistance with university personnel, and...courses and resources that offer both technical and pedagogical training to be the most beneficial to preparing them to teach online” (p.1). LCC’s instructor likewise found that the teamwork and collaboration from the college, consortium, and CCCS is what ultimately made the transition successful.

NEXT STEPS

Next steps for LCC’s welding program include further refinement of the courses in future semesters. Although CHAMP staff is happy with the course content, they are still “tweaking” the schematics of the course, including delivery. Primarily this concerns making sure the online content and welding laboratory work are linked and content is accessed—and completed—prior to the students’ time in the classroom. The instructor is going through the course content to “really work on building those bridges to make sure the connections are really, really clear.”

This fall (2015), LCC plans to reduce the student contact hours for the welding courses even further, accelerating the completion time to certificate. This will mean less time in the classroom and a faster time to employment for students. With a strong curriculum, linked course content

and classroom time, and increased time for conceptual learning, LCC is encouraged that students will have all the tools they need to succeed.

REFERENCES

- Christie, M., & Jurado, R. G. (2009). Barriers to innovation in online pedagogy. *European Journal of Engineering Education, 34*(3), 273-279.
- Hixon, E., Buckenmeyer, J., Barczyk, C., Feldman, L., & Zamojski, H. (2012). Beyond the early adopters of online instruction: Motivating the reluctant majority. *The Internet and Higher Education, 15*(2), 102-107.
- Lackey, K. (2011). Faculty development: An analysis of current and effective training strategies for preparing faculty to teach online. *Online Journal of Distance Learning Administration, 14*(4).
- McQuiggan, C.A. (2012). Faculty development for online teaching as a catalyst for change. *Journal of Asynchronous Learning Networks 16*(2), 27-61.
- Mitchell, B., & Geva-May, I. (2009). Attitudes affecting online learning implementation in higher education. *International Journal of E-Learning & Distance Education, 23*(1), 71-88.
- Mitchell, L.D, Parlamis, J.D. & Caiborne, S.A. (2015). Overcoming faculty avoidance of online education: From resistance to support to active participation. *Journal of Management Education, 39*(3), 350-371.
- Samarawickrema, G., & Stacey, E. (2007). Adopting Web-Based Learning and Teaching: A case study in higher education. *Distance Education, 28*(3), 313-333.